

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
EASTERN DIVISION

DEARREA KING,

Plaintiff,

vs.

CITY OF COLUMBUS, et al.,

Defendants.

Case No. 2:18-cv-1060

Judge Edmund A. Sargus, Jr.
Chief Magistrate Judge Elizabeth P. Deavers

AFFIDAVIT OF EXPERT DR. JEREMY J. BAUER

I, JEREMY J. BAUER, Ph.D., having been first duly sworn according to law, hereby declare and state the following:

1. I have been retained by Plaintiff Dearrea King to provide expert testimony in the above-referenced case. In connection with this retention as an expert witness, I have prepared a written report, dated December 7, 2020, attached hereto as an exhibit. In addition, a copy of my curriculum vitae is attached to my expert report.

2. My expert opinions and conclusions are set forth in the aforementioned expert report. I am competent to testify as an expert to such opinions and to the opinions set forth therein.

3. I hereby declare under penalty of perjury that the foregoing is true and correct.

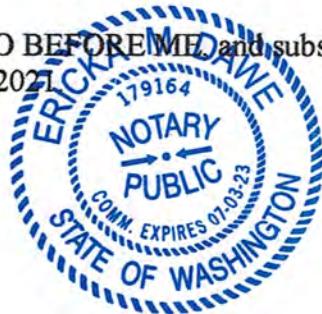
Executed this 24 day of MARCH, 2021.


JEREMY J. BAUER, Ph.D.

STATE OF Washington)
COUNTY OF King) SS:
)

SWORN TO BEFORE ME and subscribed in my presence, this 24th day of

March, 2021.




NOTARY PUBLIC

EXHIBIT

Pl. Ex. 19



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December 7, 2020

Ms. Sarah Gelsomino
Friedman & Gilbert
55 Public Square, Ste. 1055
Cleveland, OH 44113

Re: *Dearrea King v. City of Columbus, et al., U.S.D.C. S.D. Ohio, Case. No. 2:18-CV-1060*

Dear Ms. Gelsomino:

1. At your request, I am writing this summary of my analysis and opinions in the above-referenced matter. My opinions are based on a reasonable degree of scientific and biomechanical certainty and founded on my professional education and on my academic and consulting experience in the fields of injury biomechanics, anatomy, visibility analysis, accident reconstruction and shooting incident reconstruction. If called as a witness, I could and would competently testify as to the opinions set forth in this report. I reserve the right to amend or supplement these opinions should additional information become available.

Qualifications

2. I am the owner of Bauer Forensics, LLC. I am also a certified accident reconstructionist, as recognized by the Accreditation Commission for Traffic Accident Reconstruction (ACTAR #2763) and a Certified Forensic Photographer as recognized by the International Association for Identification (IAI). In addition, I am a member of ASTM E30 on Forensic Sciences, E58 on Forensic Engineering and Committee F13 on Pedestrian/Walkway Safety. I graduated with a B.S. in Physical Education (Biomechanics Emphasis) in 1997 from Boise State University and then an M.S. in Human Performance (Biomechanics Concentration), with a minor in Zoology in 2000 from Oregon State University and a Ph.D. in Human Performance (Biomechanics Concentration) in 2006 from Oregon State University. As an undergraduate and graduate student, I took advanced math and physics courses as well as courses in engineering mechanics/dynamics and anatomy and physiology and thus have extensive training in the fundamental scientific principles upon which injury reconstructions, ballistics and shooting reconstructions and biomechanical analyses are based. While a graduate student at Oregon State University, I worked as a graduate research assistant on research funded by the National Institutes of Health aimed at biodynamic study and simulation of human movement and relating forces from landings and falls to changes in skeletal tissue. I have published research in peer-reviewed journals and have presented at major conferences. I have more than 20 years of research and consulting experience in fields ranging across ballistics/shooting reconstruction, accident/collision reconstruction, slip, trip and fall dynamics, injury biomechanics, human functional anatomy, orthopaedics and visibility analysis. I have testified in both State and Federal court, in matters ranging from visibility analysis (what could the person have seen at the time of the incident), evidence documentation, 3D scene reconstruction and officer involved shootings. I have been retained to conduct shooting reconstructions at the request of both families of victims and law enforcement. Based upon my education, training and experience, I am familiar with the underlying theory and the applications of ballistics and shooting incident reconstruction, visibility analysis and injury biomechanics that are raised in this case.

3. Please find attached a copy of my curriculum vitae (Exhibit 1) and a Bauer Forensics, LLC fee schedule (Exhibit 2).

Case Materials

4. Complaint (09/14/2018); Defendants' Answer and Third Party Complaint (11/13/2018); Report of Matthew Noedel (09/24/2020); Report of Thomas B. Paige (09/25/2020); Autopsy Photographs (117); Scene Photographs (210); Scene Laser Scan Files (TruView CSSU 17-302A (170309); TruView CSSU 17-464A (170411)); CIRT Investigation File: Initial Statement of Officer Mason (09/14/2016); Written Statement of Officer Mason (09/22/2016); Formal Statement of Officer Mason (09/22/2016); CFD Report #16133509 (PIS TMK 004056-004059); CPD Rep.160822092-005 (PIS TMK 000066-000073); CPD Rep.160822744-001 (PIS TMK 000082-000088); CPD Rep.160822744-002 (PIS TMK 000117-000123); CPD Rep.160822744-003 (PIS TMK 000145-000151); CPD Report #173013027-001 (PIS TMK 000008-000012); Criminal Investigation Summary (PIS TMK 000033-000038); Data Processing Work Sheet (PIS TMK 000162-000163); Final Progress (PIS TMK 000264-000265); Forensic Progress (PIS TMK 000262-000263); Preliminary Progress (PIS TMK 000238-000245); Recovered Firearm Report (PR#16020613) (PIS TMK 001806-001807); Second Progress (PIS TMK 000255-000255); Third Progress (PIS TMK 000257); Use of Force Report (PIS TMK 000152-000153); Body Diagram (PIS TMK 000487-000487); Drawing (PIS TMK 000458-000458); Drawing (PIS TMK 000639-000639); Drawing (PIS TMK 000741-000741); Drawing (PIS TMK 000744-000744); Evidence Receipt (PIS TMK 000490-000490); Forensic Evidence Request (PIS TMK 000493-000493); Index of Informational Summaries (PIS TMK 000275-000278); Informational Summaries #01-#46; Mason Personnel File: Mason Drivers License (BCM BCK 000002); Mason Employment Application (BCM BCK 000024); Mason Employee Info (BCM BCK 000041); Mason Criminal History Review (BCM BCK 000044); CSSU Reports: 09-14-16 Evidence & Photo Collection Lists (PIS TMK 000964-000976); 09-15-16 Evidence & Photo Collection Lists (PIS TMK 000988-001018); CSSU Report 09-14-16 Sgt. Standley (PIS TMK 000958-000959); CSSU Report 09-15-16 Det. Cooper (PIS TMK 000997); CSSU Report 09-15-16 Det. Jackson, Autopsy (PIS TMK 001015); CSSU Report 09-15-16 Sgt. Standley (2d Rpt.) (PIS TMK 001006); CSSU Report 09-15-16 Sgt. Standley (PIS TMK 000985); Scene Diagrams: Blank Diagram of Scene (PIS TMK 001074); Hand-drawn Diagrams of Scene (PIS TMK 001080-001086); Scene Diagram with Evidence Plotted (PIS TMK 001076); and Body Diagram (PIS TMK 000486); Autopsy Report (09/30/2016); Affidavit of Anna Skora (06/20/2017); Deposition and Exhibits of Demetrius Braxton (08/19/2019); Deposition and Exhibits of Michael Ames (07/16/2019); Deposition and Exhibits of William Scott (08/21/2019); Deposition and Exhibits of Officer Bryan C. Mason (02/27/2020); Deposition and Exhibits of Robert E. Reffitt (02/27/2020); Report of Francisco J. Diaz (09/25/2020); and Report of Melvin L. Tucker (09/04/2020).

Background

5. According to the Complaint (09/14/2018), on or about September 14, 2016, at approximately 7:42 p.m., Tyre King (13 years old; 120 lbs; 5'2") was shot and Killed by Officer Bryan Mason of the Columbus Division of Police in a small lot on the southeast corner of E. Capital Street and S. 19th Street in Columbus, OH. Officer Mason and his partner, Officer Robert Refitt, were responding to a suspected armed robbery. On September 22, 2016, eight days after the incident, Officer Mason produced a written statement. He wrote, "*I looked south in the alley (S. 19th St.) and immediately saw two male blacks running northbound, at a full sprint, directly toward me. The males were approximately 15-20 yards south of me. The first male suspect, who I believe was dressed in all dark or black clothes, was running about 5 feet ahead and to the left (northwest) of the second male[Tyre King]. At the same time, I saw two Columbus Police officers, who also were running northbound, and they were approximately 15-20 yards behind the two males. I moved a few steps south near the center of the S. 19th St. alley, raised my gun, and began shouting "Get down!" or "Get on the ground!" Almost immediately after I shouted these commands, the first male in dark clothing dropped down onto his chest near the middle of the alley, with his hands open and his hands spread out to the sides of his head. He was approximately 15 to 20 feet south/southwest of me at that time, and I saw that the pursuing officers quickly were approaching him.*" (Mason Written Statement – 09/22/2016; PIS TMK 000831).

6. Officer Mason continued, "*The second male suspect[Tyre King] was running to the right and slightly behind (southeast of) the first male. The second male was wearing a light color shirt, and when*

I started to shift my focus to him, I could immediately see what I believed was the grip of a handgun that was tucked into his front waistband. As I repeatedly shouted "Get down!", the second male suspect (who I now know was Tyre King) continued running, veering northeast toward a car that was parked, facing south, in a small parking area located on the southeast corner of two alleys (S. 19th St. and E. Capital St.). I thought he was going to run past the driver's side of the parked car, but he came to a stop with a quick stutter step - facing north - approximately 3 feet in front of the car on the driver's side." Officer Mason then wrote, "This second suspect[Tyre King] looked directly at me before he grabbed the grip of the handgun in his waistband and tugged on it. I was intently focused on the suspect's hands and the potential threat of a gun in his waistband. While still shouting "Get down!", I quickly took one or two steps closer to the passenger side of the parked car, hoping it would provide me with some cover. My gun was raised and pointed at the suspect at that time, and he forcefully tugged on the grip of his gun at least one or two more times as if it were snagged on something. In that instant, his refusal to comply with my commands and his continuing attempts to pull the gun out, caused me to believe that he was going to engage me in a gun fight. He then pulled the gun out of his waistband and, as he raised it up in front of his torso, I could see it had a laser sight or light attached to the bottom of the barrel. I believed he was going to shoot me, and I fired my gun at him. Immediately after my first shot, the suspect began to spin clockwise (to his right), and, immediately following my last shot, he dropped to the ground in front of the parked car." (Mason Written Statement – 09/22/2016; PIS TMK 000832).

7. Finally, Officer Mason wrote, "*The suspect was laying on his chest, and I could see his left arm and hand to the left side of his body, but I could not see his right hand. He was not moving, and I positioned myself between the front of the parked car and the suspect. I asked Officer Reffitt to cover me, and I stepped forward to place handcuffs on the suspect, believing that his gun might be under him in his right hand. I was able to secure the handcuffs after pulling the suspect's right hand out. I then quickly scanned the area, and saw the suspect's gun, which appeared to be a dark color semi-automatic pistol with a laser sight attached to the bottom of the barrel. The gun was on the ground slightly in front, or slightly under the front bumper, of the parked car.*" (Mason Written Statement – 09/22/2016; PIS TMK 000833)

8. After the incident, photographs were taken of the scene and evidence found at the scene. The evidence at the scene consisted of three bullet casings (Figure 1) from rounds fired by Officer Mason, blood from Tyre's head (Figure 1) on the dirt and grass, a BB gun (Figure 2) alleged to have been in Tyre's possession before and during the shooting and a bullet hole (Figure 3) in a nearby fence. Note, the time of day each photograph was taken, included in the meta data written into each photo file, was incorrect. For example, the photograph included in Figure 1 is shown as having been taken at 11:20:33 AM, when the photograph was clearly taken the evening of the incident. Locations of evidence were documented and mapped to a scaled scene diagram (Figure 4). However, the location of the bullet strike in the fence as shown on the diagram is inconsistent with the photographed location of the bullet strike on the fence.



Figure 1. Photographs taken on September 14, 2016, showing the relative locations of the bullet casings, the BB gun found between the wheel stop and the left front tire of a Honda Accord and the blood from Tyre's head.



Figure 2. Photographs taken on September 14, 2016, showing (LEFT) the relative locations of the BB gun found between wheel stop and the left front tire of a Honda Accord and blood from Tyre's head; and (RIGHT) a close up photograph of the gun Tyre allegedly drew from his waistband just before being shot by Officer Mason.



Figure 3. Photographs taken on September 14, 2016, showing (LEFT) the relative locations of the BB gun found at the scene and the blood from Tyre's head to the bullet hole in the fence; and (RIGHT) a close up photograph of the bullet hole in the fence.

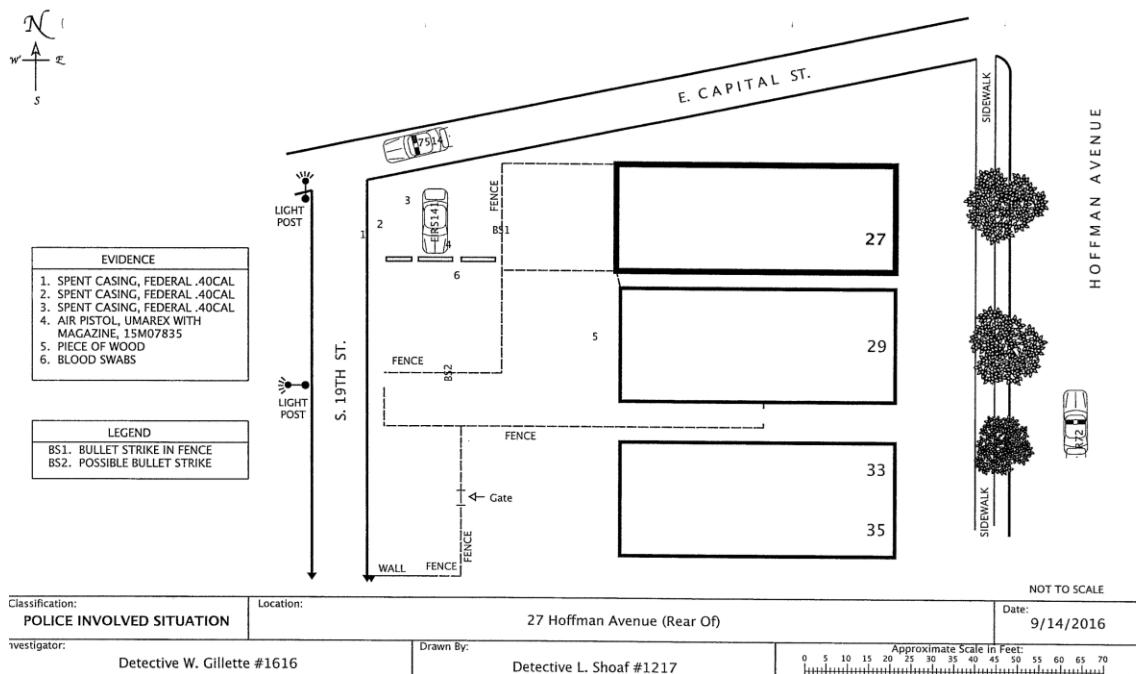


Figure 4. Scene diagram created by Detective L. Shoaf showing the relative locations of evidence found at the scene. Note, the location of "BS1" on the diagram is inconsistent with the photographed location of the bullet strike on the fence. The bullet hole was found substantially further south on the fence than was documented on this diagram.

9. On September 15, 2016, at 1:00 pm, approximately 17 hours after Tyre was shot and killed by Officer Mason, an autopsy was performed by Emily Hansen, M.D. Dr. Hansen described Tyre's manner of death as a "*Homicide*" and cause of death as "*Gunshot wounds of the head and torso*". Post-mortem blood and urine tests reported no drugs in Tyre's system. Dr. Hansen examined Tyre's body and found three unique bullet entry wounds and two bullet exit wounds. Those wound descriptions and photographs are summarized below including text directly from the autopsy report. Note, the order of presentation does not describe the order in which Tyre was struck by the bullets:

PERFORATING GUNSHOT WOUND OF THE HEAD (Figure 5):

- a. ENTRANCE: On the left temporal scalp, 3 inches below the top of the head, 3 inches left of the anterior midline, 2-1/4 inches from the left external auditory meatus at the 12 o'clock position is a 7/16 x 3/8 inch defect with a circumferential 1/16 inch wide dry red-brown marginal abrasion. Soot is not visible on the skin edges or within the hemorrhagic wound track. No stippling or unburned or burned gunpowder particles are on the skin surrounding the wound.
- b. PATH: The hemorrhagic wound track sequentially perforates the skin and soft tissue of the left temporal scalp, left temporal bone, dura, left temporal lobe, brainstem, right temporal lobe, dura, right temporal bone, soft tissue and skin of the right temple.
- c. EXIT: On the right temple, 4 inches below the top of the head, 2-1/2 inches right of the anterior midline, 2 inches from the right external auditory meatus at the 2 o'clock position, is a 1/2 x 7/16 inch lacerated defect.

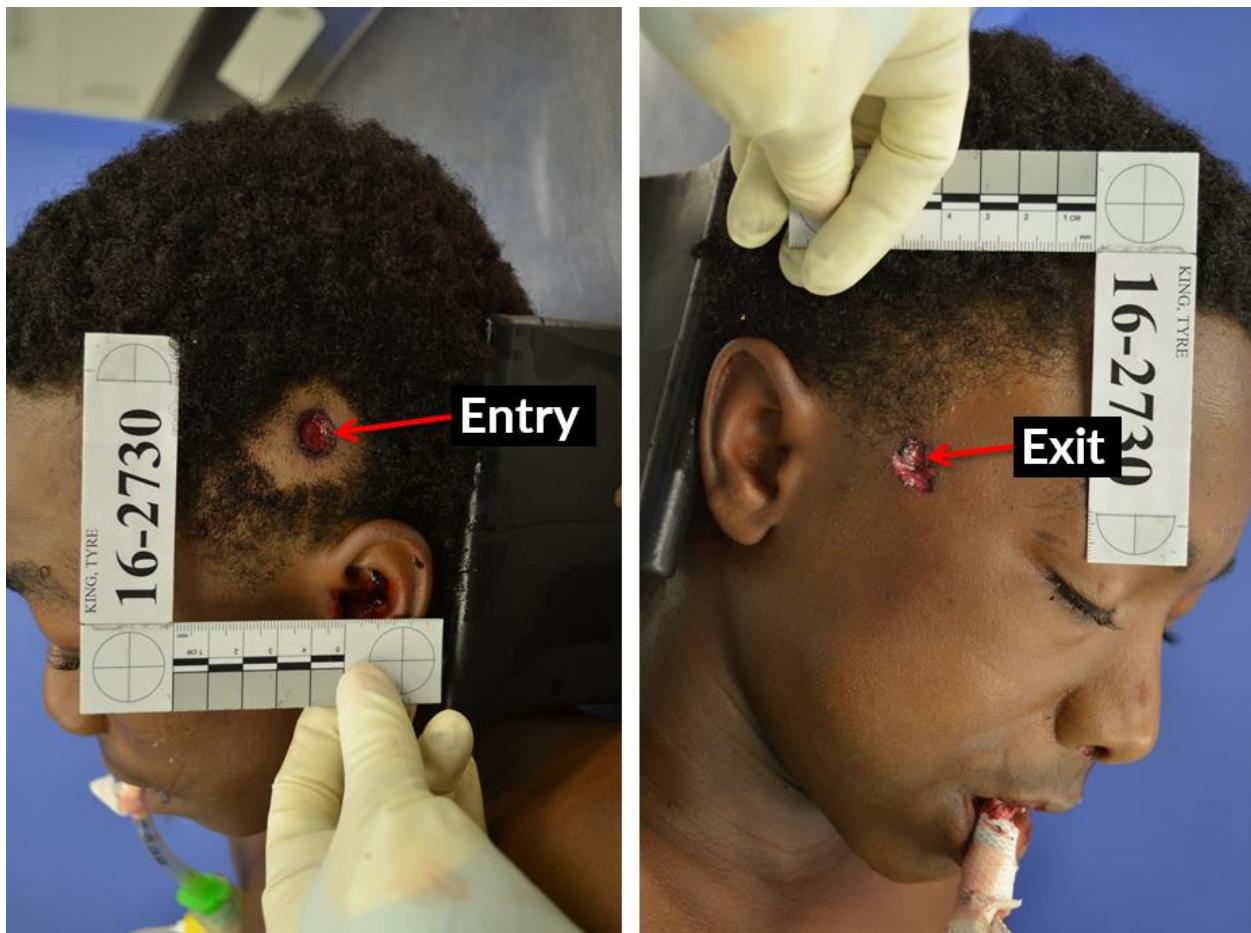


Figure 5. Photographs taken on September 15, 2016, showing the entry wound to the left temporal scalp of Tyre's head from a bullet fired by Officer Mason and the exit wound on the right temple. The bullet that struck Tyre's head travelled left to right, back to front and downward.

PERFORATING GUNSHOT WOUND OF THE ABDOMEN (Figure 6):

- a. ENTRANCE: On the upper left side of the abdomen, 19 inches below the top of the head, 2-1/2 inches left of the anterior midline, 4-1/4 inches from the umbilicus at the 1 o'clock position, is a 1/2 x 3/8 inch defect with a dry red-brown marginal abrasion along the 12 o'clock to 5 o'clock edges of the wound that is maximally 5/16 inch wide at the 2 o'clock position. Soot is not visible on the skin edges or within the hemorrhagic wound track. No stippling or unburned or burned gunpowder particles are on the skin surrounding the wound.
- b. PATH: The hemorrhagic wound track sequentially perforates the skin and soft tissue of the upper left side of the abdomen, grazes the inferior edge of the left and right lobes of the liver, and perforates the soft tissue and skin of the lateral right side of the abdomen.
- c. EXIT: On the lateral right side of the abdomen, 23 inches below the top of the head, 4-1/2 inches right of the anterior midline, 4-1/2 inches from the umbilicus at the 9 o'clock position, is a 1/4 x 3/8 inch defect with a 1/2 inch laceration at the 9 o'clock position and a dry red-brown abrasion along the 3 o'clock to 6 o'clock edges of the wound that is maximally 1/8 inch wide at the 6 o'clock position.

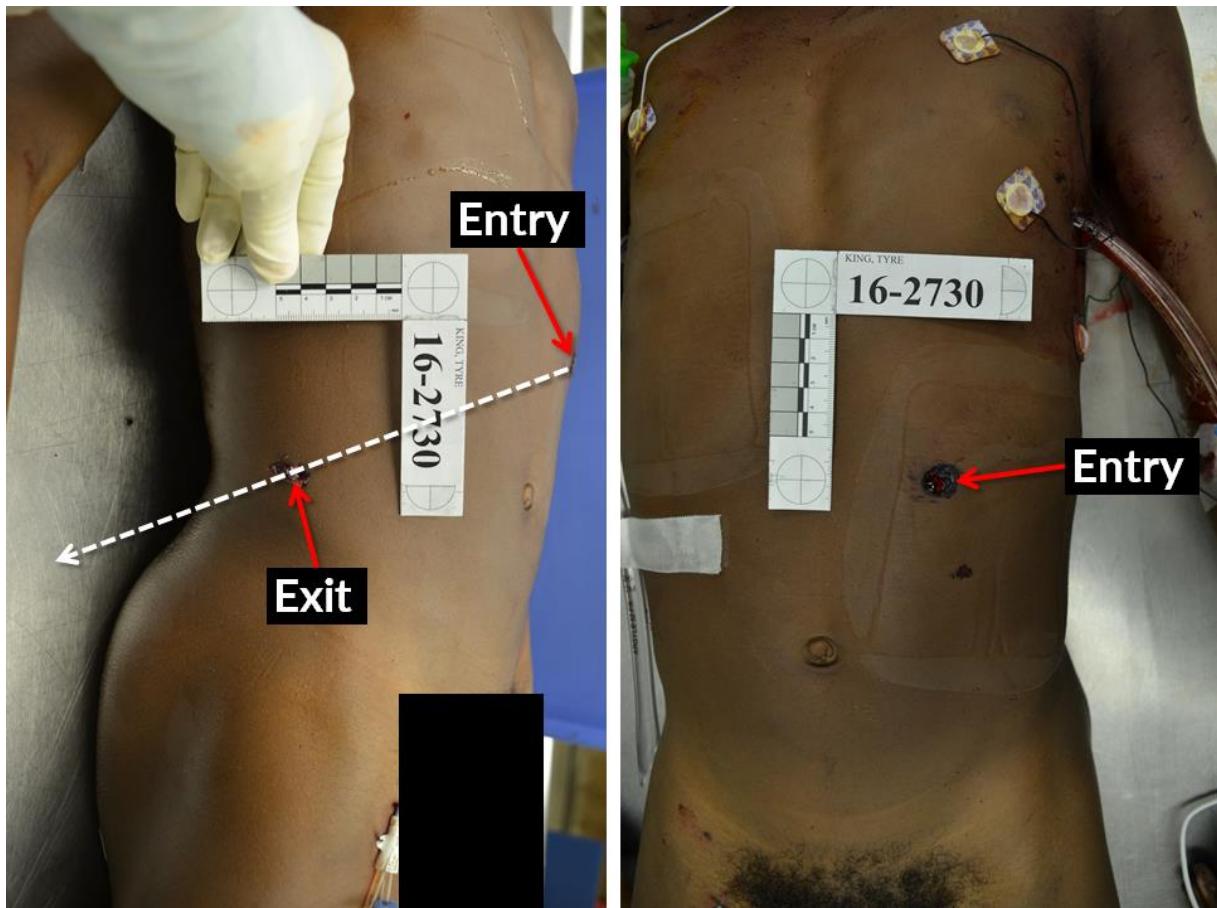


Figure 6. Photographs taken on September 15, 2016, showing the entry wound to the upper left side of Tyre's abdomen and the exit wound on the lateral right side of Tyre's abdomen. The bullet that struck Tyre's upper left chest traveled slightly left to right, back to front and sharply downward.

PENETRATING GUNSHOT WOUND OF THE CHEST (Figure 7):

- a. ENTRANCE: On the upper left side of the chest, 9 inches below the top of the head, 3-1/2 inches left of the anterior midline, 4-1/2 inches from the left nipple at the 12 o'clock position, is a 7/16 x 5/16 inch defect with a pink-red marginal abrasion along the 9 o'clock to 2 o'clock edges of the wound that is maximally 1/4 inch wide at the 12 o'clock position. Soot is not visible on the skin edges or within the hemorrhagic wound track. No stippling or unburned or burned gunpowder particles are on the skin surrounding the wound.
- b. PATH: The hemorrhagic wound track sequentially perforates the skin and soft tissue of the upper left side of the chest, anterior left second intercostal space, upper lobe of the left lung, lower lobe of the left lung, left twelfth costovertebral articulation, and penetrates the soft tissue of the mid left side of the back.
- c. EXIT: There is no exit gunshot wound
- d. PROJECTILE: Recovered from the soft tissue of the mid left side of the back, 20 inches below the top of the head, 1/2 inch left of the posterior midline, is a deformed copper-color jacketed gray metal projectile.

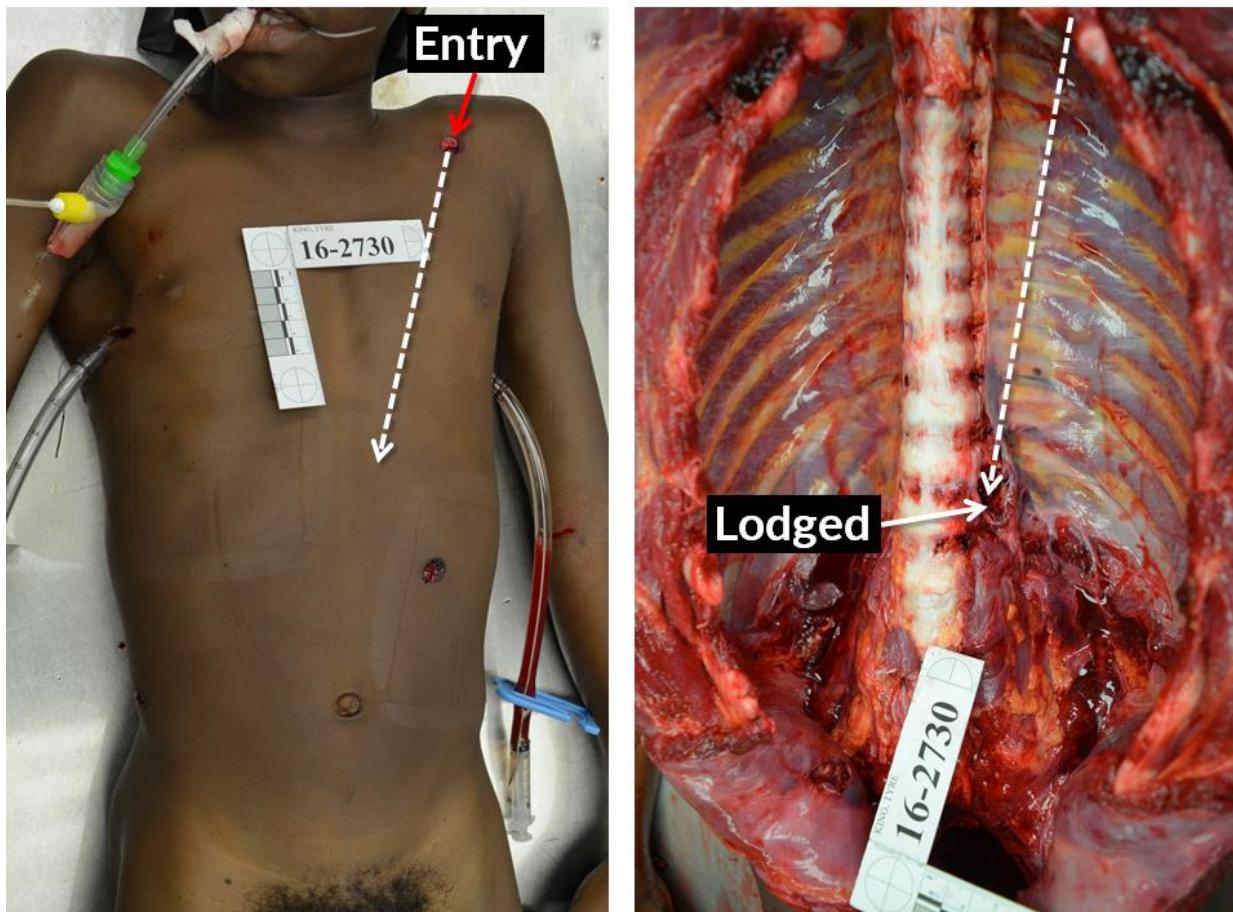


Figure 7. Photographs taken on September 15, 2016, showing the entry wound to the upper left side of the chest and the soft tissue where the bullet fired by Officer Mason lodged next to Tyre's spine. The bullet that struck Tyre's left abdomen travelled left to right, slightly front to back and downward.

10. The bullet that remained in Tyre's body was extracted during his autopsy and photographed (Figure 8). The two other bullets that struck Tyre exited his body at the scene and were not recovered.

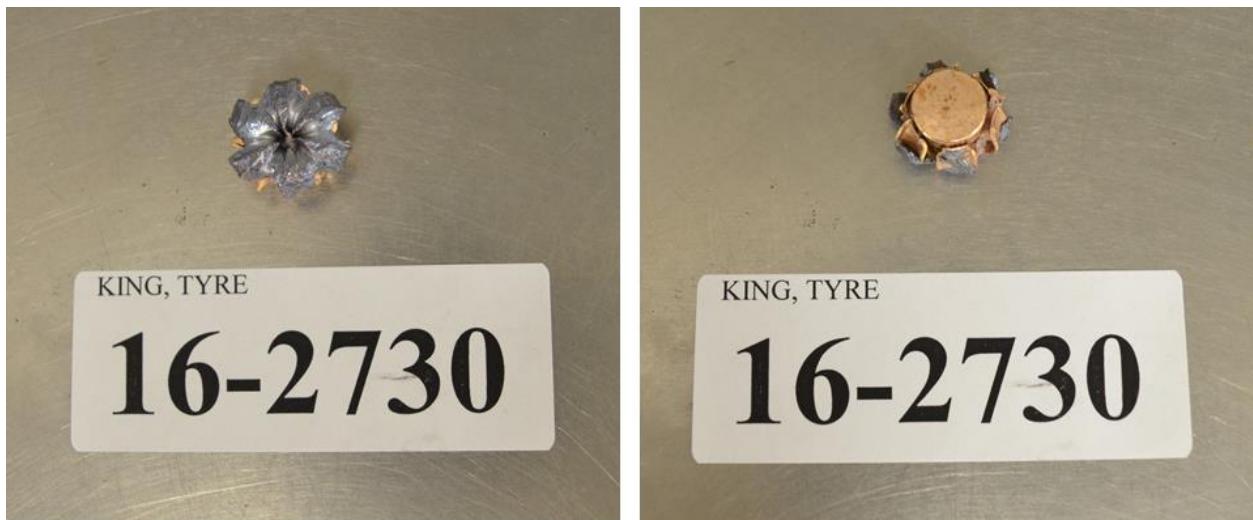


Figure 8. Photographs taken on September 15, 2016, showing the bullet that was removed from the soft tissue of the middle, left side of Tyre's back.

Analysis

11. The BB gun alleged to have been possessed by Tyre was found between a wheel stop (parking block) and the left front tire of a maroon Honda Accord. Both the gun and the Honda were on the north side of the wheel stop. The blood evidence attributed to Tyre's head wounds was documented approximately 5 feet south of the wheel stop. None of the materials received for review describe how the BB gun ended up in the position on the north side of the wheel stop. In fact, Officer Mason believed the gun was under Tyre's body after Tyre was shot and killed. Officer Mason wrote, "*I stepped forward to place handcuffs on the suspect, believing that his gun might be under him in his right hand. I was able to secure the handcuffs after pulling the suspect's right hand out. I then quickly scanned the area, and saw the suspect's gun, which appeared to be a dark color semi-automatic pistol with a laser sight attached to the bottom of the barrel. The gun was on the ground slightly in front, or slightly under the front bumper, of the parked car.*" (Mason Written Statement – 09/22/2016; PIS TMK 000833). Further, when asked during his formal statement, "...did you observe any officer touch or move the suspect's weapons?" Officer Mason answered, "No." (Mason Formal Statement – 09/22/2016; PIS TMK 000867). Given Tyre's wounds, the bullet casing evidence and the unexplained location of the BB gun after the incident, the specific questions analyzed, to a reasonable degree of scientific and biomechanical certainty, were: 1) How was Tyre's body and head oriented with respect to Officer Mason when struck by each of the three bullets fired by Officer Mason? 2) Are Tyre's wounds consistent with Officer Mason's description of the incident? 3) How did the BB gun get to its position-of-rest between a wheel stop and the left front bumper of a Honda Accord given Officer Mason's claim that Tyre was holding the gun at the time shots were fired? And 4) If Tyre had been able to throw the gun from his location to where it was found after he was shot, what throwing motion would produce the required flight path and would such a motion have been within Officer Mason's field-of-view? The fundamental objective of the analysis presented here is to address this dispute on the basis of objective facts and reliable scientific methods, to a reasonable degree of scientific and biomechanical certainty. To address these questions, I reviewed the case materials, including photographs

of the scene, photographs of Tyre and his injuries, Officer statements and the autopsy report. In addition, I performed a shooting reconstruction based on the evidence provided and reviewed the peer-reviewed literature on shooting incidents.

Methods

12. To reconstruct the shooting incident, the scene diagram was superimposed over a scaled Google Earth image (Figure 9) of the area where the incident occurred was placed into 3D visualization software (Daz Studio v.4.14.0.10 Pro Edition). The positions of the bullet casings as documented on the scene diagram were used to determine the approximate location of Officer Mason when each shot was fired. The position of casings upon being ejected from a handgun varies based on the manufacturer of the firearm and the angle of the firearm when discharged(2,3). Lewinski *et al.* (2010)(2) demonstrated that 97% of spent cartridge casings ejected from semi-automatic handguns end up to the right and rear of the shooter (Figure 10). Once Officer Mason's approximate position was determined, bullet paths were created to connect a line between the approximate location of the barrel of the gun above the ground and the documented bullet wounds on and through Tyre's body as well as the bullet-hole evidence on the fence.

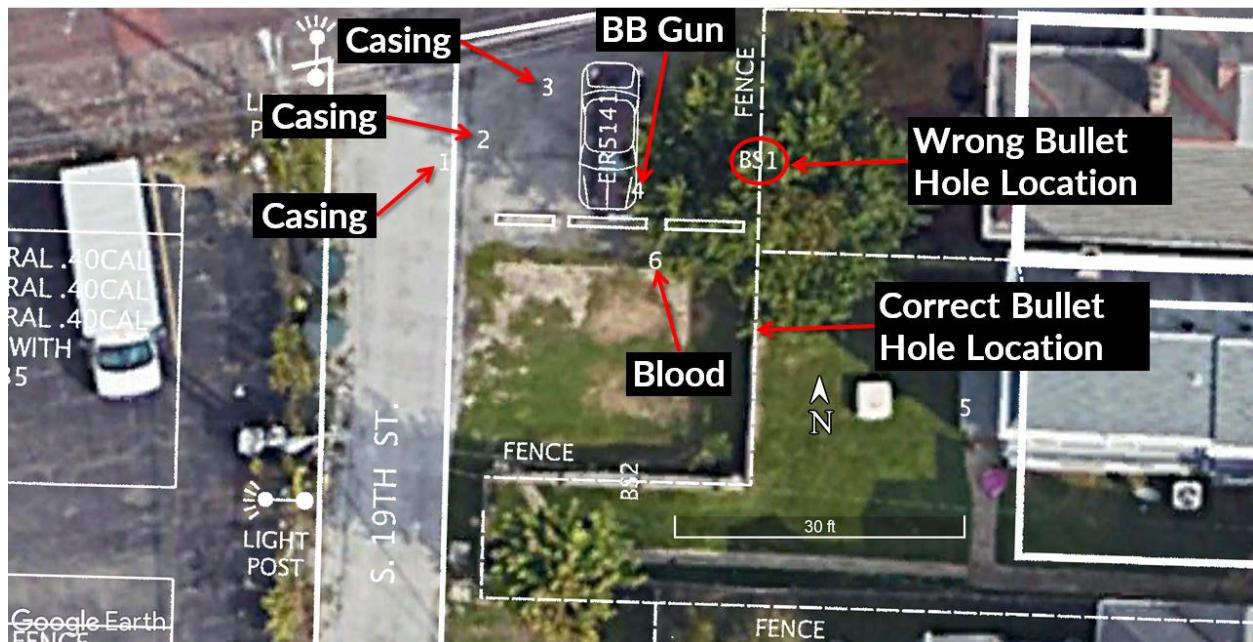


Figure 9. Google Earth image taken on August 13, 2017, with the scene diagram superimposed and evidence labeled.

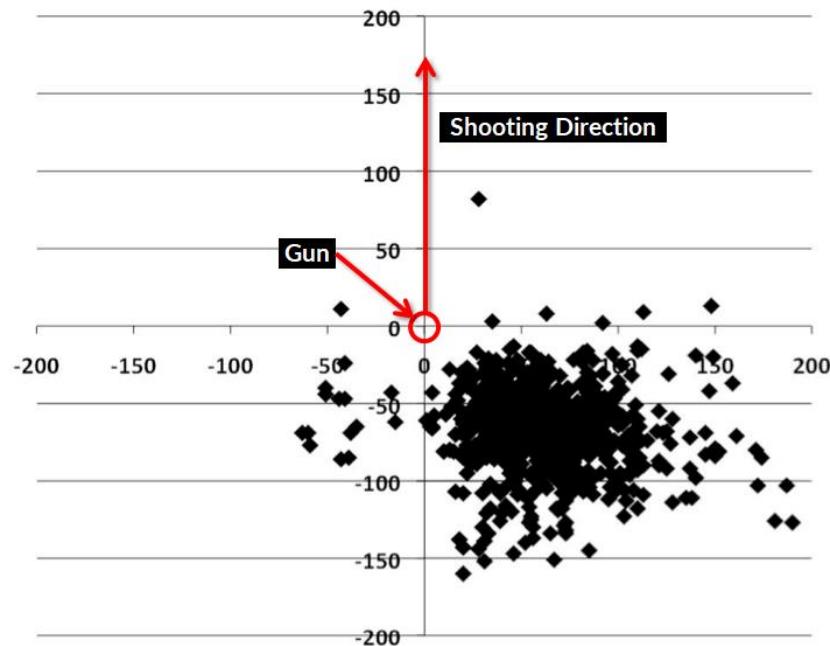


Figure 10. Scatter plot from Lewinski *et al.* (2010)(2) demonstrating the distribution of bullet casings ($n=700$) that had landed on sand after having been ejected from eight different semi-automatic handguns, oriented with the barrel parallel to the ground when fired. Most of the spent casings ended up to the right and rear of the shooter.

13. *Ballistics/Wound Mapping.* One of the foundational precepts of a shooting reconstruction is that the injuries/wounds themselves serve as a signature to the orientation of the body containing the wounds with respect to the source of the projectiles(bullets)(1). Haag & Haag (2011) wrote, "*The reconstructive value of bullet paths through people cannot be understated...the path of a gunshot wound is...useful in evaluating the position of a gunshot victim at the moment the causative bullet arrived.*" Similarly, the most that can be concluded from the bullet evidence in Tyre's body, is how that specific body part was oriented with respect to Officer Mason's gun at the time the bullet struck Tyre. For example, bullet wounds and paths through the abdomen do not provide sufficient information for a reconstructionist to describe what the right arm was doing at the time the body was struck by a bullet. Thus, to determine Tyre's likely posture when he was shot, the paths of the three bullets that struck him were marked on a 3D surrogate. The 3D scaled surrogate for Tyre was created based on his height (62") and body shape (Daz Studio v.4.14.0.10 Pro Edition)(Figure 11). Spherical markers were placed on the surrogate at the specific anatomic locations associated with bullet wounds (entry, exit and lodged) described in the Franklin County Coroner's Report. 3D cylinders were then created to represent the three bullet paths. The cylinders were connected between the respective entry and exit wounds, or entry wound and the location where one bullet was observed lodged next to the left side of Tyre's spine. Once the wounds and bullet paths were marked on the 3D surrogate for Tyre, the surrogate was placed into the scaled 3D scene containing the scene evidence and a scaled 3D surrogate for Officer Mason (5' 7" according to Officer Mason's Driver's License) standing with a "...strong right hand, two-handed grip..." (Mason Written Statement – 09/22/2016; PIS TMK 000834). The surrogate for Tyre was then positioned to angle the bullet paths such that they were consistent with having originated from Officer Mason's gun, approximately 60" above the ground.

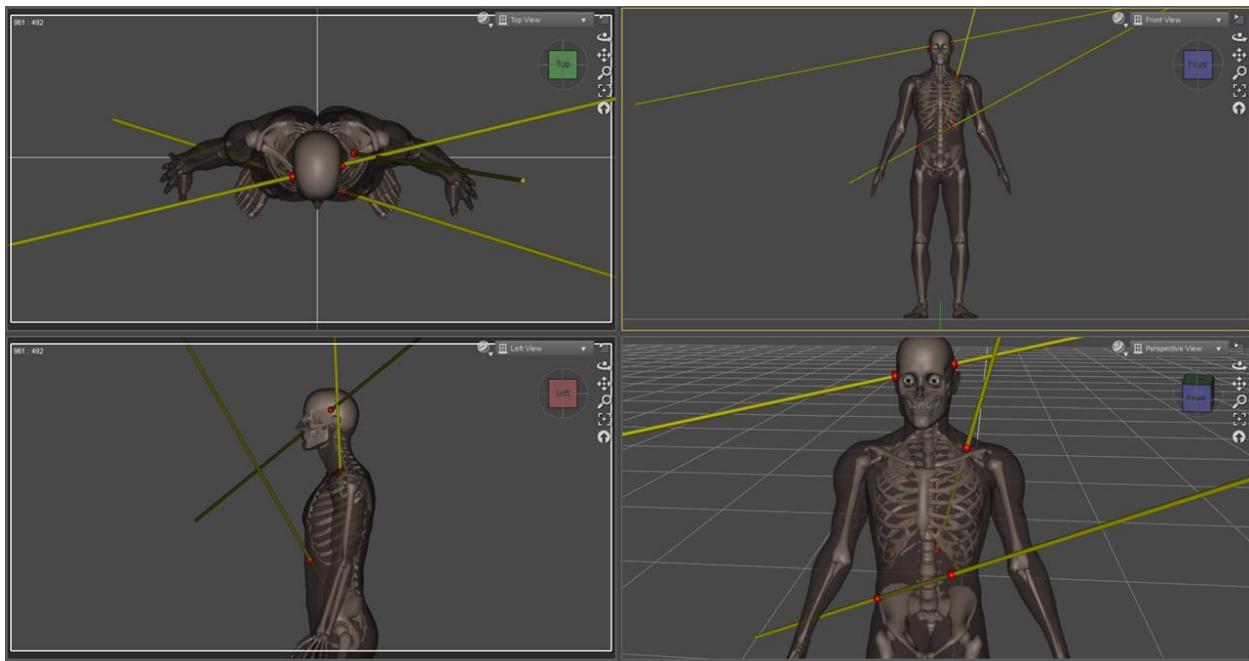


Figure 11. Screen capture from 3D visualization software (DAZ Studio) showing the red spheres marking the bullet wound evidence and the yellow cylinders representing the paths of the bullets through the respective bullet wounds. The spheres were placed based on the appearance of the wounds in the autopsy photos and the specific locations described in the Franklin County Coroner's Report. The 3D surrogate is shown standing in a neutral position.

14. It is my understanding that laser scans of the scene were taken some time after the incident using a Leica 3D laser scanner. The scanner documented the scene geometry as well as the location of the bullet hole in the fence with respect to the approximate location Tyre was likely standing when he was shot. The raw laser scan data (point cloud) were not provided for review and/or analysis. However, processed laser scan data were provided in a limited format (Leica TruView format), which allowed the location of the bullet hole to be measured relative to the scene (Figure 12). The bullet hole was approximately 43 inches above the ground where Tyre was standing when he was shot.



Figure 12. Screen capture from Leica TruView software showing the view from one position at the scene where a laser scanner recorded distances to objects and features in the area. The red 145" line was created using the TruView viewer based on the laser scanned geometry of the scene. The yellow lines were superimposed to show the approximate height of the bullet hole in the fence above the location where Tyre was standing when he was shot.

Results/Discussion

15. Tyre was looking away from Officer Mason when Officer Mason shot Tyre in the head (Figure 13). The bullet that struck and passed through Tyre's head was likely the same bullet that penetrated the fence. Tyre was bent to his left with his left side facing Officer Mason when he sustained the bullet wounds to his abdomen (Figure 14). The shots to Tyre's head and left abdomen were the first two shots fired. However, the order of those two shots is unknown. Given the sharp downward angle of the bullet path from Tyre's left upper chest to his spine, Tyre was bent forward, and/or to his left and falling toward the ground when he was struck by the bullet that entered his left upper chest. This bullet strike was the last bullet fired by Officer Mason. These bullet paths are consistent with the paths described in the report of Francisco J. Diaz, M.D., who conducted an independent forensic examination of Tyre's body on September 18, 2016. All shots were fired while Officer Mason was in the vicinity of the right front tire of the Honda Accord that was parked in the area. These findings are consistent with Officer Mason's recollection of Tyre's body position when shots were fired. Officer Mason stated, "*I fired...directly at him, uh, towards his left side, front area.*" (Mason Formal Statement – PIS TMK 000867).



Figure 13. Screen capture from 3D visualization software showing the relative position of Officer Mason to Tyre when Tyre was shot in the head. Tyre's left side was facing Officer Mason and Tyre was looking away from Officer Mason.

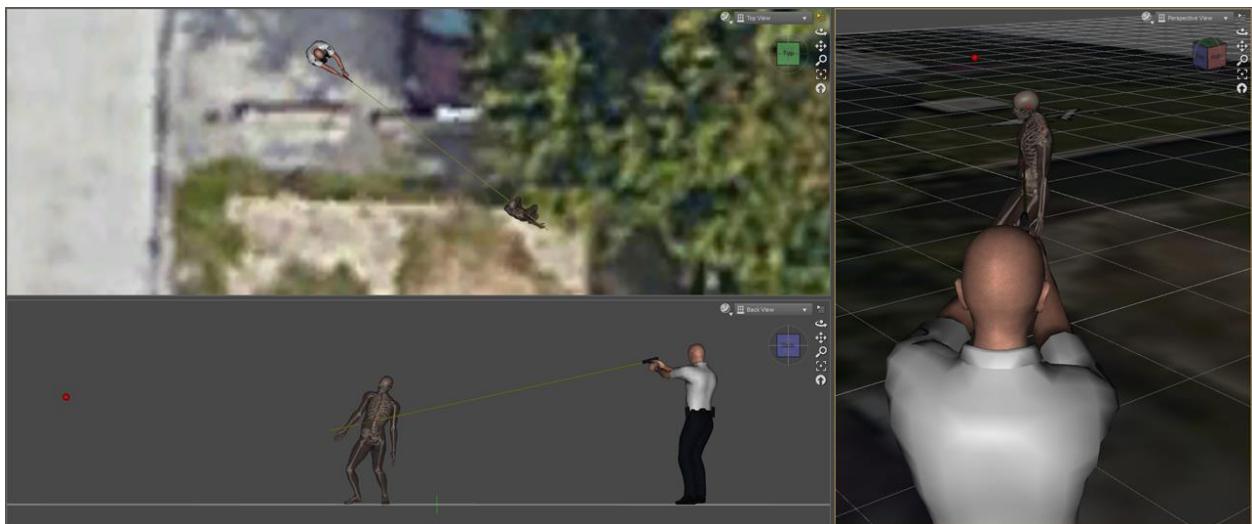


Figure 14. . Screen capture from 3D visualization software showing the relative position of Officer Mason to Tyre when Tyre was shot in the left side of his abdomen. Tyre's left side was facing Officer Mason, with only a very slight rotation toward Officer Mason.

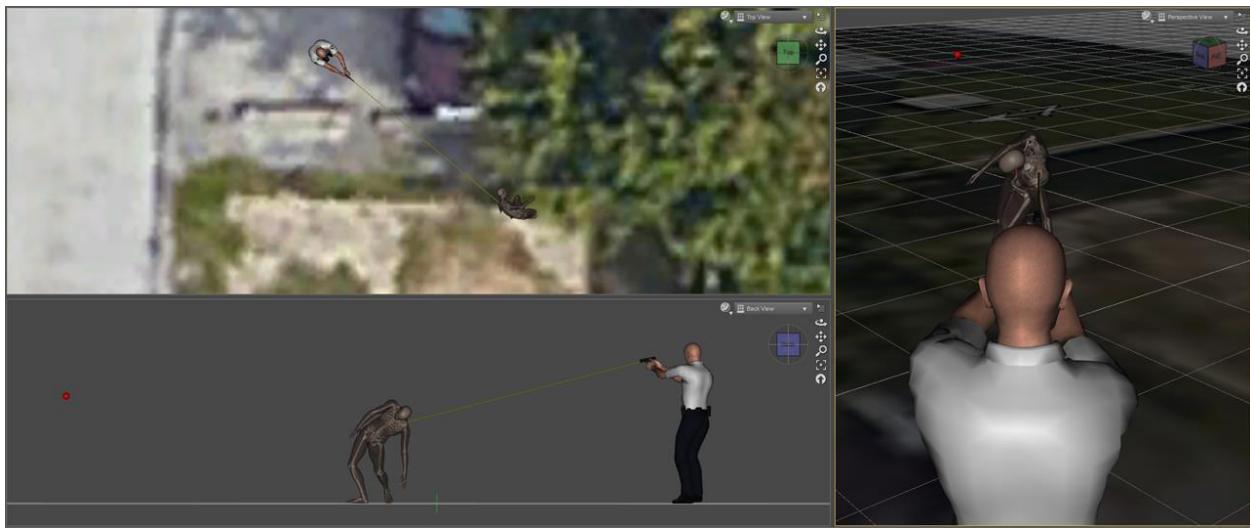


Figure 15. . Screen capture from 3D visualization software showing the relative position of Officer Mason to Tyre when Tyre was shot in the left upper chest. This leftward bend while collapsing is consistent with the left sided bending observed when he was shot in the left abdomen. Tyre was falling when struck by this final bullet.

16. The BB gun alleged to have been possessed by Tyre during the incident was found between a wheel stop (parking block) and the left front tire of a maroon Honda Accord. Both the BB gun and the Honda were on the north side of the wheel stop. The blood evidence from Tyre's head was documented approximately 5 feet south of the wheel stop. None of the materials reviewed describe how the BB gun ended up on the north side of the wheel stop. Further, Officer Mason does not know how the gun arrived at its position of rest. Officer Mason wrote, "*I stepped forward to place handcuffs on the suspect, believing that his gun might be under him in his right hand. I was able to secure the handcuffs after pulling the suspect's right hand out. I then quickly scanned the area, and saw the suspect's gun, which appeared to be a dark color semi-automatic pistol with a laser sight attached to the bottom of the barrel. The gun was on the ground slightly in front, or slightly under the front bumper, of the parked car.*" (Mason Written Statement – 09/22/2016; PIS TMK 000833). Further, when asked during his formal statement, "*Did you, or did you observe any officer touch or move the suspect's weapons?*" Officer Mason answered, "*No.*" (Mason Formal Statement – 09/22/2016; PIS TMK 000867). Prior to shooting Tyre, Officer Mason stated that he could clearly see a gun in Tyre's waistband and that he saw Tyre pull the gun out of his waistband. Specifically, Officer Mason wrote, "*It was dusk, at - or just after - sunset, when this incident occurred, and there was enough light for me to see the grip on the suspect's gun that was sticking out above his waistband as he ran toward me. I also was able to see him tug on the gun grip two or three times, before he pulled the gun up from his waistband.*" (Mason Written Statement – 09/22/2016; PIS TMK 000835). Thus, the question remains, if Tyre had a BB gun in his possession while being pursued and confronted by Officer Mason, how did the gun get to its position of rest on the north side of the wheel stop? There are two likely possibilities: 1) Tyre tossed the gun before he was shot; or 2) Tyre tossed the gun as he was being shot. Had Tyre tossed the gun before he was shot, then Officer Mason's recollection of Tyre holding a gun as shots were fired is incorrect. Further, Officer Mason would have observed Tyre throwing the gun and, more importantly, would have heard the gun first hit the Honda Accord, before falling to the ground on the north side of the wheel stop. Had Tyre tossed the gun while he was being shot, Officer Mason clearly would have observed Tyre swing his arm to toss the gun. Further, he again likely would have heard the gun hit the Honda and fall to the ground in front of the left front tire. Officer Mason's description of Tyre's kinematics upon being shot is inconsistent with Tyre tossing the gun north toward the Honda. Officer Mason wrote, "*Immediately after my first shot, the suspect began to spin clockwise (to his right), and,*

immediately following my last shot, he dropped to the ground in front of the parked car." (Mason Written Statement – 09/22/2016; PIS TMK 000832). All of Officer Mason's bullets struck Tyre's left side. Had Tyre spun clockwise after the first shot struck him, Tyre's right hand (and the gun he was allegedly holding) would have moved south, away from the Honda and the wheel stop and not north, toward the wheel stop. Further, had he spun clockwise, subsequent shots would have entered Tyre's back side.

Report of Matthew Noedel

17. I have reviewed Mr. Noedel's report and generally agree with his methodology and analysis regarding the relative locations of Tyre and Officer Mason through the shooting incident as depicted on pages 19-21 of his report. However, on page 22 of Mr. Noedel's report, he includes a second set of reconstructed positions for Tyre and Officer Mason. It is unclear if the 3D surrogates for Tyre and Officer Mason presented on pages 19-21 have the same geometry as the figures Mr. Noedel presented on page 12 and page 22 of his report. Mr. Noedel did not describe how he created, or where he sourced his computer models, nor have his computer models been produced for review. Thus, it is unknown if the figures are scaled to their real-world heights. Correctly scaled surrogates are important in shooting reconstructions, especially in this case given the height discrepancy between Tyre and Officer Mason. Further, the reconstructed relative positions of Tyre and Officer Mason depicted on page 22 are different from the positions depicted on pages 19-21. Regarding the reconstructed positions depicted on page 22, Mr. Noedel wrote, "*Three computer models showing how the orientation of King can rapidly change to account for the three different bullet impact locations. In this view, the model representing Mason was held stationery and King was moved. Both Mason and King may be moving at the same time to further complicate the variety of orientations possible in the brief time of shooting.*" The models on page 22 were created using different software and different 3D surrogates for Tyre and Officer Mason compared to the models he included on pages 19-21. Additionally, this second reconstruction by Mr. Noedel does not produce Tyre's head wound given the bullet path through the head in this second depiction would not have produced the bullet hole in the fence.

Opinions

18. Based on my review of the autopsy photos and photos of scene evidence, and on my background, education and training in the fields biomechanics and shooting incident reconstruction, I conclude, to a reasonable degree of scientific and biomechanical certainty, that: 1) Tyre's left side was facing Officer Mason when he was struck by the three bullets fired by Officer Mason. Tyre was looking away from Officer Mason when Officer Mason shot Tyre in the head; 2) Tyre's wounds are inconsistent with Officer Mason's account that Tyre spun clockwise during the shooting; 3) There is no physical evidence to demonstrate that Tyre was holding a gun when he was shot by Officer Mason. It is unknown how the gun came to rest north of the wheel stop; and 4) Had Tyre thrown the gun before, or during the shooting incident, the throwing motion would have been visible to Officer Mason and within Officer Mason's field-of-view.

19. Please note that I reserve the right to supplement this report should additional information become available to me and should the physical evidence in this matter be made available for inspection. Thank you for the opportunity to review this case. Please let me know if I can provide any further information.

Respectfully Submitted,

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References

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